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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,393	12/27/2000	Hiroshi Minagawa	SIP1P044	7511

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EXAMINER

MCCARTNEY, LINZY T

ART UNIT	PAPER NUMBER
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2671

DATE MAILED: 09/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/751,393

Applicant(s)

MINAGAWA ET AL

Examiner

Linzy McCartney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 8-10, 13, and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,203,431 to Miyamoto et al (Miyamoto) in view of U.S. Patent No. 6,342,892 to Van Hook et al. (Van Hook).

- a. Referring to claim 1, Miyamoto discloses “generating a dummy of said object” (column 1, line 65 – column 2, line 7 and Fig. 8), “determining positions of said object and said dummy object so that said dummy object thus generated is positioned behind said object and overlaps only in part with said object when observed from a view point “ (column 9, line 65 – column 10, line 13), “drawing said object at said position thus determined and drawing said dummy object at said determined position...” (column 11, line 65 – column 12, line 3 and Fig. 20) and “drawing...said dummy object...in a lightness different from that of said object.” (Fig. 20). Miyamoto does not explicitly disclose “drawing said dummy object at said determined position except for an overlapping portion between said object and said dummy object when observed from the view point...” However, Van Hook discloses utilizing a Z-buffer to perform hidden surface removal in a video game system (column 2, lines 18-31). It would have been obvious to one having ordinary skill in the art at the time the invention was made to

modify the disclosure of Miyamoto with the teachings of Van Hook because performing hidden surface removal ensures only objects visible from a specified view point are displayed.

b. Referring to claim 2, Miyamoto discloses “wherein in said determination of the positions, the positions of said object and said dummy object are determined so that said generated dummy object is positioned behind said object when observed from the view point and so that there is deviation between a straight line connecting a predetermined reference position of said object and the view point and a straight line connecting the view point and a position in said dummy object corresponding to the predetermined reference position of said object.” (column 9, line 65 – column 10, line 13 and Fig. 20).

c. Referring to claim 3, Miyamoto discloses “... wherein said drawing, said dummy object and said object are drawn at said respective determined positions in the order named”. (Fig. 9).

d. Claim 4 is rejected with the rationale of the rejection of claim 1.

e. Referring to claim 5, the modified program of Miyamoto has applied to claim 1 above meets the limitations recited in claim 5 except “...drawn...said dummy object...in the lightness higher than that of said object.” Miyamoto discloses the aforementioned limitation (Fig. 8 and column 8, lines 20-27).

f. Claim 8 is rejected with the rationale of the rejection of claim 1. Claim 8 is merely claim 1 recited as a method.

g. Claim 9 is rejected with the rationale of the rejection of claim 2. Claim 9 is merely claim 2 recited as a method.

- h. Referring to claim 10, Miyamoto discloses "...wherein said drawing, said object is drawn at said determined position after said dummy object is drawn at said determined position in the lightness different from that of said object." (Fig. 9 and Fig. 20).
 - i. Claim 13 is rejected with the rationale of the rejection of claim 1. Claim 13 is merely claim 1 recited as an apparatus.
 - j. Claim 16 is rejected with the rationale of the rejection of claim 1. Claim 16 is merely claim 1 recited as an apparatus.
 - k. Claim 17 is rejected with the rationale of the rejection of claim 1. Claim 17 is merely claim 1 recited as a program.
- 3. Claim 6-7, 11-12, 14-15 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyamoto in view of Van Hook as applied to claim 1 above and further in view of U.S. Patent No. 5,579,454 to Billyard et al. (Billyard).
 - a. Referring to claim 6, the modified program of Miyamoto as applied to claim 1 above meets the limitations recited in claim 6 except "...setting a distance from a view point of each polygon forming the object..." and "...drawing each polygon...in accordance with a drawing order of said polygons resulting from sequencing of said polygons from the greatest distance from the viewpoint..." However, Billyard discloses the "Painter's Algorithm" a method in which polygons are ranked in order of decreasing distance from the viewpoint and then rendering the polygons in the aforementioned order (column 2, lines 35-42). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the program of Miyamoto with the teachings of Billyard because it would facilitate the hidden surface removal process.

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- b. Claim 7 is rejected with the rationale of the rejection of claim 6. In the Painter's Algorithm disclosed in claim 6, only the pixel data closest to the viewpoint will be displayed on the screen.
- c. Claim 11 is rejected with the rationale of the rejection of claim 6. Claim 11 is merely claim 6 recited as a method.
- d. Claim 12 is rejected with the rationale of the rejection of claim 7. Claim 7 is merely claim 12 recited as a method.
- e. Claim 14 is rejected with the rationale of the rejection of claim 6. Claim 14 is merely claim 6 recited as an apparatus.
- f. Claim 15 is rejected with the rationale of the rejection of claim 7. Claim 15 is merely claim 7 recited as an apparatus.
- g. Claim 18 is rejected with the rationale of the rejection of claim 6. Claim 18 is merely claim 6 recited as a program.
- i. Claim 19 is rejected with the rationale of the rejection of claim 7. Claim 19 is merely claim 7 recited as a program.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Linzy McCartney** whose telephone number is **(703) 605-0745**. The examiner can normally be reached on Mon-Friday (8:00AM-5:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mark Zimmerman**, can be reached at **(703) 305-9798**.

Any response to this action should be mailed to:

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Commissioner of Patents and Trademarks

Washington, D.C. 20231

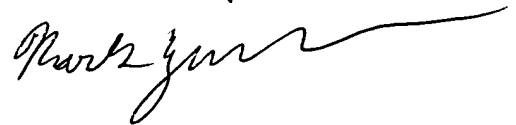
or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding
should be directed to the Technology Center 2600 Customer Service Office whose
telephone number is (703) 306-0377.

ltm
September 13, 2002



MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600